

What is menopause?

Key points

- The term "menopause" refers to the final menstrual period. The average age of menopause in Australian women is 51 years (normal range 45-55).
- Surgical menopause refers to menopause as a result of bilateral oophorectomy.
- Natural menopause occurs due to loss of ovarian follicles, follicular development and thus hormone production. The resulting oestrogen withdrawal leads to varying clinical effects.
- The perimenopause (time period preceding the menopause to one year after the menopause) is characterised by hormonal fluctuation, anovulatory cycles and onset of cycle irregularity and menopausal symptoms.
- Common symptoms of menopause include vasomotor symptoms (hot flushes and night sweats) and urogenital symptoms. However, multiple other symptoms may be experienced.
- Menopause is associated with adverse metabolic and bone changes leading to an increased risk of cardiovascular disease and osteoporosis.
- The diagnosis of the menopause is usually a clinical diagnosis in women over 45 who have not had a hysterectomy.
- Management requires a comprehensive assessment to formulate an individualised treatment plan.

Definition of menopause

The word *menopause* refers to the last or final menstrual period. When a woman has had no periods for 12 consecutive months, she is considered to be *postmenopausal*. At menopause, loss of ovarian follicles, follicular development and ovulation results in cessation of cyclical oestrogen and progesterone production.

Most women become menopausal naturally between the ages of 45 and 55 years, with the average age of onset at around 51 years. Surgical menopause refers to menopause as a result of bilateral oophorectomy. Premature menopause or premature ovarian insufficiency may occur before the age of 40 due to natural ovarian function ceasing, following surgery to remove the ovaries, or as a result of chemo/ radiotherapy. Menopause is considered "early" when it occurs between 40 and 45 years. See AMS information sheets [Early menopause due to chemotherapy and radiotherapy](#), [Spontaneous Premature Ovarian Insufficiency](#) and [Surgical Menopause](#).

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Now that women live around one third of their lives after menopause, optimising physical and mental health during this period is becoming more important.

What is perimenopause (the menopausal transition)?

The *perimenopause* is the time period preceding the menopause to one year after the menopause, and is characterised by hormonal fluctuation, anovulatory cycles and onset of cycle irregularity and symptoms. The *menopause transition* is the time period leading up to the final menstrual period¹. Hallmarks of the perimenopause are changes in a woman's menstrual periods such as, irregular periods or changes in flow. Cycles can be shorter or longer in length. Symptoms may also include hot flushes and night sweats, aches and pains, fatigue or irritability, as well as premenstrual symptoms such as sore breasts. Although women may be experiencing irregular menstrual cycles and anovulation, pregnancy can occur and contraception is required. Some women can experience menopausal symptoms for 5-10 years before their final menstrual period. Age at which a woman's menopausal symptoms will start or how long they will last, is not able to be predicted². See AMS information sheets [Perimenopause or Menopausal Transition](#) and [Contraception](#).

Physical symptoms and changes of menopause

Cessation of physiological production of oestrogen at the menopause may result in sequelae ranging or 'raging' from unpleasant to pathological. Only 20% of women report no menopausal symptoms. Typical symptoms commonly reported by peri- and postmenopausal women include hot flushes, night sweats and sleeping difficulties, bodily aches and pains, dry skin, vaginal dryness, loss of libido, urinary frequency, and mood and memory changes. Some women may have unwanted hair growth, itchiness of the scalp, thinning of scalp and pubic hair and skin changes³. Multiple biopsychosocial factors impact menopausal symptoms including cause of menopause, woman's age, psychological and physical health, attitude to menopause, ethnicity and education levels.

1. Vasomotor symptoms (hot flushes and sweats)

Hot flushes and night sweats are the hallmarks of menopause, occurring in approximately 75% of postmenopausal women, with 25% of these being severely affected. The percentage of women reporting hot flushes varies across countries and ethnic backgrounds. Symptoms may resolve in 2–5 years but the median duration is 7 years.

A hot flush is a subjective sensation of extreme heat associated with objective signs of cutaneous vasodilation and a subsequent drop in core body temperature. Women with oestrogen deficiency have a narrower thermoneutral zone. They have sensations of extreme heat despite a small increase in core body temperature. Peripheral vasodilation and sweating help to dissipate heat. Recent literature

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describes the hypertrophy of KNDY neurons in the hypothalamus in postmenopausal women. These neurons express Neurokinin B which appears to induce hot flushes⁴.

Vasomotor instability in the menopause is a major contributing factor to disturbed sleep at menopause, adversely affecting quality of life, relationships, careers, and wellbeing. Vasomotor symptoms may also be a marker of cardiovascular disease with greater severity and earlier onset of vasomotor symptoms being of greater relevance⁵. See AMS information sheet [Sleep disturbance and the menopause](#).

2. Genitourinary Syndrome of the Menopause

Urogenital symptoms associated with menopause, referred to as genitourinary syndrome of menopause or vulvovaginal atrophy are common but often “suffered in silence” as women may be reluctant to disclose these symptoms. Symptoms include vaginal dryness, burning, irritation, decreased lubrication with sexual activity, dyspareunia and an increased risk for urinary tract infections. Thinning of pubic hair, loss of the labial fat pad, thinning and resorption of the labia minora, reduced vaginal calibre and changes in the vaginal mucosa all occur as a result of oestrogen depletion in the menopause. These symptoms frequently persist in older women after vasomotor symptoms have resolved. See AMS information sheets [Vulvovaginal symptoms after menopause](#) and [Sexual difficulties in the menopause](#).

3. Psychological and cognitive symptoms of menopause

Hormonal changes, vasomotor symptoms and sleep deprivation can contribute to mood changes, anxiety, irritability, forgetfulness, and trouble concentrating or making decisions. Women often complain of “brain fog” or brain fade⁶. There is a 50% decrease in serotonin (a chemical that regulates mood, emotions and sleep) after the menopause with declining oestrogen levels. Depression is not more common at menopause than at other stages of life, but a past history of depression, particularly post-natal depression, and stress during the peri-menopause may make a woman more likely to succumb to mood problems. See AMS information sheets [Mood and the menopause](#) and [Oestrogen and cognition in the perimenopause and menopause](#).

4. Skin Changes

Oestrogen increases production of glycosaminoglycans, promote sebum production, increase water retention and improve barrier function of the stratum corneum and menopause is therefore associated with dry skin. Degradation of elastin and a reduction in the microvasculature and thinning of the epidermis also occurs. There is a reduction in axillary and pubic hair. Some women complain of pruritis (itching) while others have a feeling of ants crawling on their skin (formication).

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5. Muscle and bone

Ageing and menopause contribute to decline in muscle mass and strength in postmenopausal women. The menopausal transition is associated with a decline in oestrogen, growth hormone, IGF-1, and DHEA, a decrease in muscle protein synthesis, and an increase in inflammation. However, low physical activity, protein intake (<0.8 g/kg/day) and elevated oxidative stress are the greatest contributors of sarcopenia in postmenopausal women.

Osteoporosis is a systemic skeletal disease characterized by low bone mass and micro architectural deterioration of bone tissue leading to enhanced bone fragility, and a consequence increase in fracture risk⁷. Oestrogen prevents bone loss and may restore lost bone and limits excess osteoclastic resorption. Thus, the risk of osteoporosis is increased in postmenopausal women, where one in three women after the age of 50 experience a fragility fracture. Fragility fractures are the fourth leading cause of chronic disease and morbidity. Mortality rates of up to 25% occur in the first year after a hip fracture. All postmenopausal women should have a clinical osteoporosis risk assessment^{8,9}. See AMS information sheets [Osteoporosis](#) and [Prevention of falls and fractures](#).

6. Metabolic changes

Decline in oestrogen levels with menopause, combined with ageing, leads to metabolic changes which increase the risk of cardiovascular disease, the leading cause of death in women^{5,10,11}. Increased visceral fat, adverse changes in lipids and blood vessels, endothelial dysfunction, increased insulin resistance, increased blood pressure and activation of the renin-angiotensin pathway contribute to atherosclerosis¹⁰.

How is menopause diagnosed?

The diagnosis of the menopause is a clinical diagnosis in women over 45 years based on a woman's symptoms and changes in menstruation. The diagnosis is obvious where a woman has had her ovaries removed surgically.

A symptom score sheet can be a useful way to determine what symptoms a woman is experiencing and whether any treatment is indicated (See [AMS Symptom Score Card](#)).

Measurement of FSH to diagnose perimenopause or menopause is not usually indicated. A single hormone test, such as a measurement of elevated follicle-stimulating hormone (FSH) is not a reliable indicator of the perimenopause, as women's hormone levels may fluctuate from day to day. However, investigations may be required in certain cases including: (i) if the woman has had a

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hysterectomy; (ii) concern that symptoms may be due to illness (e.g., thyroid disorder rather than natural ageing); or (iii) if woman is under 45 years of age. See AMS information sheet [Diagnosing menopause](#)).

How can symptoms be handled?

Managing menopause requires a comprehensive assessment including symptoms, risk of chronic disease, lifestyle and appropriate screening and development of an individualised plan incorporating the woman's treatment goals and risk: benefit analysis. Management options include: lifestyle measures, non-pharmacological, contraception, non-hormonal and menopausal hormone therapies¹³. The [AMS Symptom Score Card](#) can assist in assessing response to treatment. AMS information sheets are available describing these options in detail (see AMS Information sheets:

- [Lifestyle and behaviour modifications for menopausal symptoms](#)
- [Weight management and health ageing](#)
- [Combined menopausal hormone therapy](#)
- [Oestrogen only menopausal hormone therapy](#)
- [Risks and benefits of MHT/HRT](#)
- [Venous thrombosis/thromboembolism risk and menopausal treatments](#)
- [Nonhormonal treatments for menopausal symptoms](#)
- [Complementary and herbal therapies for hot flushes](#)

Bioidentical custom compounded hormone therapy is not recommended (see AMS information sheet [Bioidentical custom compounded hormone therapy](#)).

Feeling positive about the menopause

Women may experience physical and emotional changes during menopause but that doesn't mean life has taken a turn for the worse! Many women are prompted at this time to 'take stock' of their lives and set new goals. The menopause occurs at a time when many women may be juggling roles as mothers of teenagers, as carers of elderly parents, and as members of the workforce. Experts suggest that creating some 'me time' is important to maintain life balance. Menopause can be seen as a new beginning: it's a good time to assess lifestyle, health and to make a commitment to strive for continuing wellbeing in the mature years.

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